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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/595,227	06/16/2000	MINGMING FANG	99154X204201	2766

29050 7590 06/13/2002

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EXAMINER

SHAKERI, HADI

ART UNIT

PAPER NUMBER

3723

DATE MAILED: 06/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/595,227

Applicant(s)

FANG ET AL.

Examiner

Hadi Shakeri

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huynh et al. in view of James et al.

Huynh et al. discloses all the limitations of claim 1, i.e., a slurry containing water, an oxidizing agent, abrasive material and higher than 0.04M, col. 2, lines 15-20, phosphate ion or phosphonate ion, col. 2, lines 60-67, Huynh et al. also states that the invention can also be used for other surfaces, col. 1, lines 8-10, except for specifically disclosing the use of the slurry for polishing a surface of a memory disk. James et al. teaches a fixed abrasive polishing system, planarizing substrates including memory disk and semiconductor device substrates. It is known in the art as indicated by James et al. (col. 1, lines 34-37) to apply a CMP polishing system in applications for either a memory disk or a semiconductor device.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to apply the slurry of Huynh et al. in polishing a memory disk since it is known in the art to use a CMP system for manufacturing of both semiconductor devices and memory disk, as cited by James et al., and since the invention of Huynh et al. utilizes slurries which are resistant to pH changes.

Regarding claims 2, 3, 5 and 6, PA (Huynh et al. in view of James et al.) meets the limitations, i.e., Huynh et al., Figs. 1 and 2.

Regarding claims 7-10, PA meets the limitations, Huynh et al., col. 2, lines 39-46.

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Regarding claim 11, PA meets the limitations, James et al., col. 2, line 67 and col. 3, lines 5-8.

Regarding claims 12-14, PA meets the limitations, Huynh et al., col. 3, line 62.

Regarding claims 17-21, PA meets the limitations, Huynh et al., col. 2, lines 60-67, and col. 3, lines 1-3.

Regarding claims 22, 23, PA meets the limitations, Huynh, col. 2, lines 15-22.

Regarding claim 4, It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the invention of prior art for memory disk comprising nickel-phosphorus, dependent on work-piece parameters, which would involve only routine skill in the art.

3. Claims 1-14 and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. in view of Huynh et al.

James et al. discloses all the limitations of claim 1, i.e., a polishing composition comprising an oxidizer and abrasive material and a pH modifier, col. 4, lines 41-44, except for disclosing 0.04 M or higher phosphate ion or phosphonate ion. Huynh et al. teaches a polishing slurry with a pH buffering component comprising phosphoric acid or salt. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of James et al. with the pH buffer as taught by Huynh et al. to obtain slurries which are resistant to pH changes, Huynh et al. col. 2, line 14.

Regarding claims 2, 3, 5 and 6, prior art (James et al. in view of Huynh et al.) PA meets the limitations, i.e., Huynh et al., Figs. 1 and 2.

Regarding claims 7-10, PA meets the limitations, Huynh et al., col. 2, lines 39-46.

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Regarding claim 11, PA meets the limitations, James et al., col. 2, line 67 and col. 3, lines 5-8.

Regarding claims 12-14, PA meets the limitations, Huynh et al., col. 3, line 62.

Regarding claims 17-21, PA meets the limitations, Huynh et al., col. 2, lines 60-67, and col. 3, lines 1-3.

Regarding claims 22, 23, PA meets the limitations, Huynh, col. 2, lines 15-22.

Regarding claim 4, It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the invention of prior art for memory disk comprising nickel-phosphorus, dependent on work-piece parameters, which would involve only routine skill in the art.

4. Claims 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huynh et al. and James et al. as applied to claim 1 above, further in view of Ishitobi et al., US Patent No. 6,152,976.

PA discloses all the limitations of the above claims, except for weight percentage of the oxidizing agent (0.1 to 5 molar). Ishitobi et al. teaches an abrasive composition for a memory hard disk with an optional oxidizing agents content of greater than 0.01 wt.%. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the composition of Huynh et al. with the weight percent of oxidizer as taught by Ishitobi et al. to enhance the abrading action, Ishitobi et al., col. 5, line 24.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Response to Arguments

6. Applicant's arguments filed 04 have been fully considered but they are not persuasive.

With regards to the argument that Huynh et al. does not disclose the limitations of 0.04 M or higher concentration of phosphonate or phosphate ion, it is noted that as was indicated by the Applicant Huynh et al. discloses a concentration of 0.0001-100 M, preferably 0.01-0.1 M of possible acids including phosphate, therefore the limitation is met. The argument under section (a) page 2, that there should be a teaching or suggestion to select a phosphate over the other available choices is not persuasive, since the use of phosphate for buffer component is suggested and is included in the list of suitable choices, therefore the argument seems to suggest that the prior art is too broad and should have been limited to use of specific choice which is not persuasive. The argument under section (b) page 2, i.e., the specific amount, is also not persuasive for the same reasons. The limitations of claim language, i.e., 0.04 or 0.06 M amount are met by the prior art, as they are within the broad range disclosed. As for the argument that prior art teaches away from the present invention, it is noted that the example

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cited is for a specific application (polishing titanium utilizing potassium hydroxide), however even for this example the rate increases slightly.

The argument that prior art teaches away is not persuasive since; it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges depending upon workpiece parameter and/or desired end result, involves only routine skill in the art. *In re Aller*, 105 USPQ 233. The argument that Huynh et al. teaches away from the claimed subject matter and unexpected results are not persuasive as the limitations are disclosed and in light of reason indicated above, i.e., argument regarding the optimum range.

Regarding the selection of substrate, i.e., microelectronic devices verses memory or a rigid disk, which as defined by the Applicant on page 2, lines 30-32, has a surface that comprises nickel-phosphorus, but can comprise any other suitable material, it is noted that the teaching of prior art, i.e., Huynh et al., is a composition for a two-step method, e.g., a second step for removing scratches caused by the primary polish, col. 1, line 31, having a desirable quality of resistant to pH changes, is considered to be sufficient suggestion or teaching for application in "rigid or memory" hard disk and whether the polishing rate is effected is irrelevant since the limitation of claim 1, i.e., a composition containing phosphate ion or phosphonate ion and the amount, is disclosed as inherent in the concentration and possible buffering components listed.

In response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the

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applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392; 170 USPQ 209 (CCPA 1971).

With regards to argument that James et al. does not provide any teaching in using the polishing fluids for particular substrate. It is noted that in col. 1, lines 34-37, James et al. discloses that its polishing systems are well suited for manufacturing of both semiconductors and memory disks, the polishing "system" is considered to include both the polishing pad and the polishing fluid. Therefore the arguments regarding the selection of a phosphate ion acid or base buffer component, the concentration and the workpiece parameters, are not persuasive since as argued above they are either broadly disclosed or obvious to a person of an ordinary skill in the art.

7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Hadi Shakeri at (703) 308-6279, FAX (703) 746-3279 for unofficial documents. The examiner can normally be reached on Monday-Thursday, 7:30 AM to 6:00 PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1148.



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HS



June 11, 2002